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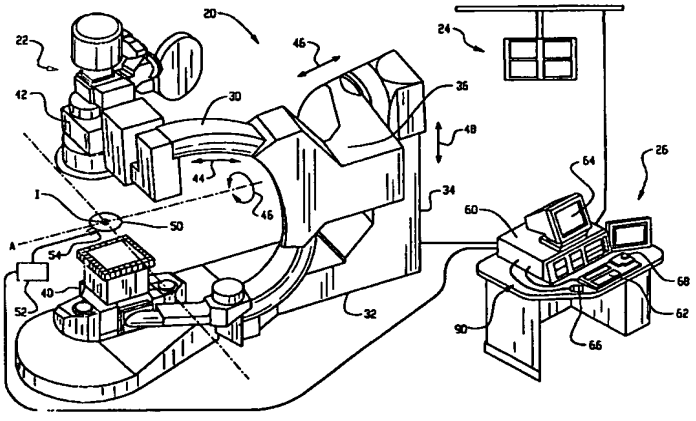
(54) Title: ROTATIONAL ANGIOGRAPHY BASED HYBRID 3-D RECONSTRUCTION OF CORONARY ARTERIAL STRUCTURE



(57) Abstract: A method and apparatus of generating a hybrid three dimensional reconstruction of a vascular structure affected by periodic motion comprises placing an object (50) affected by periodic motion to be imaged in an imaging region of an x-ray system 22, the object having a vascular structure. At least two x-ray images of the vascular structure are acquired (104, 204). Indicia of the phases of periodic motion are obtained (104, 52) and are correlated with each of the x-ray images. At least two x-ray images from a similar phase of periodic motion are selected (108). A three dimensional modeled segment of a region of interest in the vascular structure is generated (110, 210), the modeled segment reconstructed using the selected x-ray images from a similar phase of periodic motion and the region of interest only a portion of the imaged vascular structure. A three dimensional volumetric reconstruction of a vascular structure is generated (112, 212, 207) that is larger than the modeled segment. The modeled segment of interest (148) and the volumetric reconstruction of the larger vascular structure are combined and displayed (220) in human readable form.

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